AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method of synthesizing layout patterns, comprising the steps of:

embodying Walsh patterns in a set of Walsh pattern matrices;

processing at least one from the set of Walsh pattern matrices to form a set of test matrices, in which a set of combinatorial indices for n choose k matrices are determined, wherein n represents the number of matrices in the set of Walsh pattern matrices, k is the number of matrices in a group of processed matrices, and k is selected as large as possible given a set of computational constraints; and

mapping the set of test matrices to a test pattern set.

2. (Original) The method of claim 1, wherein the set of Walsh pattern matrices are generated using an Nth order Hadamard matrix, wherein N dictates the size of each matrix.

3. (Original) The method of claim 1, wherein the processing step utilizes a Boolean operation.

4. (Original) The method of claim 3, wherein the Boolean operation utilizes at least one logical operation selected from the group consisting of: a logical or, logical nor, logical and, and logical nand.

5. – 6. Cancelled.

7. (Original) The method of claim 1, wherein the mapping step maps matrix entries to tiles in a minimum space, minimum width grid, wherein each tile is assigned a value of either level on or level off.

8. (Original) The method of claim 7, wherein the mapping step adjusts spacing of tiles when a transition from on to off, or off to on is detected.

9. (Original) The method of claim 1, comprising the further step of pruning the pattern set based on a predetermined set of rules.

10. (Currently Amended) A system for generating a set of test patterns to test an optical proximity correction algorithm, comprising:

a system that generates a set of Walsh pattern matrices;

a system that processes groups of matrices from the set of Walsh pattern matrices to form a set of test matrices; and

a system that maps the set of test matrices to a test pattern set by mapping matrix entries to tiles in a minimum space, minimum width grid, wherein each tile is assigned a value of either level on or level off.

11. (Original) The system of claim 10, wherein the processing system determines a set of combinatorial indices for n choose k matrices, wherein n represents the number of matrices in the set of Walsh pattern matrices, and k is the number of matrices in each group of matrices.

12. Cancelled.

13. (Currently Amended) The method of claim [[12]] 10, wherein the mapping system adjusts spacing of tiles when a transition from on to off, or off to on, is detected.

14. (Original) The method of claim 10, further comprising a system for pruning the pattern set based on a predetermined set of rules.

15. (Currently Amended) A program product stored on a recordable medium for generating a set of test patterns to test an optical proximity correction algorithm, the program product comprising:

means for generating a set of Walsh pattern matrices;

means for processing groups of matrices from the set of Walsh pattern matrices to form a set of test matrices;

means for mapping the set of test matrices to a test pattern set by mapping matrix entries to tiles in a minimum space, minimum width grid, wherein each tile is assigned a value of either level on or level off.

16. (Original) The program product of claim 15, wherein the combining means determines a set of combinatorial indices for n choose k matrices, wherein n represents the number of matrices in the set of Walsh pattern matrices, and k is the number of matrices in each group of matrices.

17. (Original) The program product of claim 15, wherein the processing means processes matrices using a Boolean operation.

18. Cancelled.

19. (Currently Amended) The program product of claim [[18]] 15, wherein the mapping means adjusts spacing of tiles when a transition from on to off, or off to on, is detected.

20. (Original) The program product of claim 15, further comprising means for pruning the pattern set based on a predetermined set of rules.